

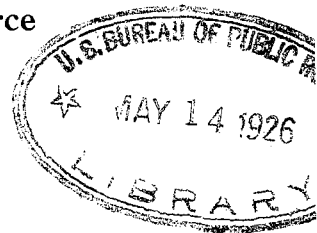
National Conference on Street and Highway Safety

Report of the

COMMITTEE ON STATISTICS

Appointed by

The Secretary of Commerce



This report is one of six issued for consideration in advance of the National Conference on Street and Highway Safety. The reports are: A Uniformity of Laws, Rules and Regulations; B Enforcement; C Causes of Accidents; D Metropolitan Traffic Facilities; E Statistics; F Public Relations

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Conference on Street and Highway Safety

Committee on Statistics

HON. HERBERT HOOVER, *Chairman,*
Conference on Street and Highway Safety,
Washington, D. C.

SIR: The Committee on Statistics presents herewith its second report on street and highway accidents throughout the United States.

Although we found in our report of 1924 that accurate and complete data regarding such accidents were lacking, we endeavored, on the basis of available information, to present the most complete possible picture of conditions in 1923 and 1924.

The survey here presented deals primarily with the returns for 1924, and with partial returns for 1925.

The Committee finds that improvement has been made in the field of accident reporting. Much remains to be done, yet there has been distinct progress among the states, and among many of the large cities as well, toward a more regular, more nearly current, and much more nearly complete record of accident statistics.

As the result of its consideration of statistical information derived from every possible source, your Committee submits the following findings and recommendations:

Summary of Conclusions

1. In the United States in the year 1924, 23,300 deaths and nearly 600,000 serious personal injuries occurred in street and highway accidents. Automobile traffic was involved in at least 85 per cent of these accidents.

2. There was an increase of 3 per cent in the number of traffic fatalities in 1924 as compared with 1923. This was due entirely to an increase in automobile accidents, which resulted in an increase of 6.8 per cent in fatalities. The number of fatalities caused by railway grade crossing accidents, by street car accidents, and by horse drawn vehicles, all declined in 1924.

3. Statistics available for the year 1925, dealing principally with the number of automobile accidents in large cities, indicate a further

increase in the number of automobile fatalities, but the rate of increase was less than in 1924. For 78 cities in the aggregate, the fatalities increased 5.0 per cent from 1923 to 1924, and 2.4 per cent from 1924 to 1925.

4. The peak in the rate of increase, both in automobile fatalities and in other traffic fatalities as well, seems to have been reached in 1923. The rate of increase was less in 1924 than in 1923, and appears to have been less in 1925 than in 1924.

5. Railway grade crossing accidents, and the fatalities caused by them, increased about 3 per cent during the first ten months of 1925.

6. In 1924 the number of automobile fatalities declined in 6 of the states of the registration area, and remained stationary in 1 state. In 2 other states the number slightly increased, but the death rate from that cause slightly declined, while in 29 registration states the death rate increased as well as the number of fatalities.

7. There are encouraging indications of a reduction in the number of automobile accidents in some of the larger cities. Of the 78 cities of over 100,000 population for which comparable information is supplied by the Department of Commerce, 33 reported a decrease for 1924 in the number of automobile fatalities; in two cities the number remained stationary.

In 1925, as compared with 1924, 27 out of the 78 cities for which comparable information was available reported a decrease, while 3 cities showed no change.

8. Another hopeful sign was the progressive reduction in a few cities. Six of the principal cities showed reductions in automobile fatalities in both 1924 and 1925, while 2 of these cities reported reductions of 5 per cent or more in both years. The Committee calls particular attention to the record of these cities, as an indication that what has been done in some localities can and should be done in others.

9. The Committee renews its recommendations of 1924 emphasizing the necessity for accurate, complete, and up-to-date statistical information regarding traffic accidents. It also renews its recommendations looking toward standard definitions of terms, reasonable uniformity in reporting and tabulating schedules, and the assembly of information regarding the cause of accidents.

10. The information which should be secured regarding traffic accidents may be grouped under the following headings, which are a revision, after further consideration, of the recommendations of the Committee in 1924:

- | | |
|--|--|
| (a) Location | (l) What was the driver doing |
| (b) Time (hour) | (m) Condition of car or cars at time of accident |
| (c) Type | (n) Speed of car or cars |
| (d) Weather | (o) Primary cause of accident |
| (e) Road conditions | (p) Contributing causes or circumstances of accident |
| (f) Lighting conditions (street) | (q) Violation of traffic ordinances or M. V. laws |
| (g) Physical condition of persons involved | (r) Age and sex of injured |
| (h) Experience of driver | (s) Extent of injuries |
| (i) Age of driver | (t) Estimate of property damages |
| (j) Relation of driver to owner | |
| (k) Mental condition of driver | |
| | (u) Preventive action recommended |

11. On the whole, and considering the record from every possible angle, the Committee feels justified in the conclusion that the safety movement and safety education generally are beginning to produce results in the traffic field, where progress has been much slower than in the field of industrial safety. The battle is not yet won, however. Merely to record a reduction in the rate of increase in automobile fatalities is not sufficient. Fatal accidents in other forms of traffic accidents are declining. They should decline still further. The number and rate of fatalities in automobile accidents should also be reduced. There must be no lessening of intensive effort until this needless loss of human life has not only been checked, but has been reduced to the smallest possible proportions.

By the Committee,

W. M. STEUART,
Chairman.

January 15, 1926.

Statistics of Street and Highway Accidents

Statistics of accidents occurring on the streets and highways of the United States, referred to in this report under the general head of Traffic Accidents, have been assembled from every available source, and are presented below under the following headings:

- a. Traffic casualties in 1924.
- b. The motor vehicle as an element in the problem.
- c. The trend of traffic fatalities in 1924.
- d. The trend of traffic fatalities in 1925.
- e. Conclusions and opinions.

A. TRAFFIC CASUALTIES IN 1924

Fatalities.—During the year 1924 there were 23,291 traffic fatalities in the United States. This was an increase of 670, or 3 per cent, over the number reported for 1923, and an increase of 4,088 over the number reported for 1922. The increase in the number of fatalities during 1924, as compared with 1923, was due entirely to automobile accidents. The number due to grade crossing accidents, to the operation of street cars, and to all other vehicles show gratifying decreases.

Table 1 gives our best estimate of the total number of traffic fatalities in the United States, for the years 1922, 1923 and 1924, together with the rate per 100,000 population in each of the three years.

TABLE 1.—HIGHWAY FATALITIES IN THE UNITED STATES^a

Type of accident	Estimated fatalities			Rate per 100,000 pop.		
	1924	1923	1922	1924	1923	1922
Ry. grade crossing.....	2,149	2,268	1,810	1.9	2.0	1.7
Street car.....	1,836	2,006	1,748	1.6	1.8	1.6
Automobile.....	17,566	16,452	13,676	15.7	14.9	12.5
Motorcycle.....	274	336	314	0.2	0.3	0.3
Injuries by other vehicles.....	1,466	1,559	1,655	1.3	1.4	1.5
Total.....	23,291	22,621	19,203	20.7	20.4	17.6

^aTable based upon reports of the Department of Commerce and the Interstate Commerce Commission. The Department of Commerce compiles statistics of deaths in the registration area, which contained 88.4 per cent of the total population in 1924. These statistics have been used to estimate the total number of highway fatalities in the United States. The Department of Commerce classifies accidents according to the heavier vehicle involved.

The appalling loss of 23,291 human lives during the single year 1924 can, of course, be explained on several bases. The Committee could emphasize the increase in the number of motor vehicles operating on the highways. We could analyze the industrial activity of our people during the last three years, and show that accidents increase when busi-

ness and industry are at their peak. But we do not conceive it our duty to explain or palliate this unnecessary slaughter. Our function is to ascertain facts, and to state those facts as emphatically as we can.

In our capacity as a fact-finding committee, we call attention to the fact that the total number of highway fatalities in 1924 was greater than the corresponding total for 1923, and considerably greater than the total for 1922. The death rate per 100,000 population from this cause progressively increased from 17.6 in 1922 to 20.4 in 1923, and to 20.7 in 1924. There was a progressive increase also in the number of fatalities between 1922 and 1924, the rate of increase being 17.8 per cent from 1922 to 1923, and 3 per cent from 1923 to 1924.

Another outstanding fact in the table is that every class of traffic fatalities declined between 1923 and 1924 except those due to automobile accidents. Automobile fatalities, however, increased by 1,114, or 6.8 per cent.

Railway grade crossing fatalities declined by 119, or 5.2 per cent, from 1923 to 1924, although much greater in number than for 1922. The encouraging phase of grade crossing accidents in 1924 is that, despite the greater potential risk growing out of increase in number of motor car registrations, the number of accidents decreased, the number of persons killed was reduced, and also the number of persons injured.

Street car or electric railway accidents also showed an encouraging decline in 1924, compared with 1923. The total number of accidents reported by a group of the larger companies, representing about 40 per cent of the whole industry, was 12.5 per cent less in 1924 than in 1923. The number of accidents in relation to the total car miles also declined. The number involving personal injuries declined 5 per cent. Fatalities in street car accidents for the whole United States, as estimated by the Department of Commerce and included in Table 1, declined by 170 in 1924, or 8.5 per cent, although greater in number than in 1922.

Approximately one-half of the street car accidents reported were due to collisions with motor vehicles. This proportion was slightly greater in 1924 than in 1923. The increase was not due to an increase in the number of automobile accidents, but rather to the greater decrease in the number of other classes of accidents.

Motorcycle fatalities declined from 336 in 1923 to 274 in 1924, or 18.5 per cent. This number was less also than in 1922.

Non-Fatal Casualties.—In addition to the traffic fatalities, there were a large number of serious casualties. Estimating 25 casualties to each fatal accident,^a there were 582,275 serious non-fatal traffic acci-

^aThis ratio has been selected by the Committee, on the basis of special reports from a number of states and cities. The ratio is smaller than that utilized in our 1924 report, which was 30 to 1.

dents in the United States during 1924. This estimate includes only accidents of a serious nature, and does not take into account hundreds of thousands of minor injuries to persons and property.

B. THE MOTOR VEHICLE AS AN ELEMENT IN THE PROBLEM

It is estimated that at least 85 per cent of the fatalities included in Table 1 involve the motor vehicle as a participating circumstance.^a The exact percentage lies probably between 85 and 86 per cent, which would make the total number of traffic fatalities in 1924, due to accidents in which motor vehicles were involved, approximately 20,000.

The actual and relative increase of deaths in automobile accidents, as compared with the total number of deaths from all classes of accidents, is shown in Table 2. This table includes as automobile fatalities those directly due to the operation of the automobile, and so charged by the Department of Commerce. The total number of accidental deaths includes those that occurred in the home, in the factory, in shops and offices, as well as those occurring on streets, highways, and at railway crossings. The statement therefore assigns to automobiles only the minimum number of deaths in which motor vehicles were involved.

TABLE 2.—ESTIMATED ACCIDENTAL DEATHS IN THE UNITED STATES^a
1917-1924

Year	Total accidental deaths	Deaths due to automobile accidents ^b	Rate per 100,000 population		Ratio per cent of automobile to total accidental deaths
			Total accidental deaths	Deaths due to automobile accidents ^b	
1917.....	89,433	9,097	88.2	9.0	10.2
1918.....	83,959	9,457	82.3	9.3	11.3
1919.....	75,546	9,825	71.9	9.4	13.0
1920.....	76,024	11,074	71.4	10.4	14.6
1921.....	74,083	12,370	68.7	11.5	16.7
1922.....	76,510	13,676	70.0	12.5	17.9
1923.....	84,624	16,452	76.4	14.9	19.4
1924.....	85,684	17,566	76.4	15.7	20.5

- ^a Based on returns to the Department of Commerce for the death registration area.
^b Does not include accidents in which automobiles were involved with heavier vehicles.

During the eight years covered by Table 2, there has been a consistent increase in fatalities assigned to the operation of automobiles, and they have formed a constantly increasing proportion of the total number of accidental deaths. Automobile fatalities, therefore, have been a principal factor in the increase in accidental deaths since 1921.

It is clear from the statistics given in the two preceding tables that the advent of the motor car into the industrial and social life of the

^a According to the Interstate Commerce Commission, nearly 80 per cent of the fatalities at steam railway grade crossings in 1924 involved automobile traffic. The estimate also takes into account the proportion of street car accidents which involved automobiles.

United States has added greatly to the complexity of traffic movement on our streets and highways. Unless its operations are properly controlled, the toll of death and injury will continue to increase during the coming years.

While the greater number of motor vehicles operating each year necessarily complicates the traffic problem, that fact should not be considered as any excuse for the increase in number of persons killed. However, the number of vehicles should be considered in connection with the number of fatalities, and Table 3 shows approximately the number that were operated each year as gauged by the number of registrations. In some instances the same machine may be registered more than once, and the number of registrations shown is therefore a maximum, whereas the number of deaths shown, as stated above, is a minimum. What effect these facts have on the actual ratios shown in Table 3 can hardly be estimated, but in any event the important consideration is the trend in the ratio. This ratio is shown in terms of number of automobile fatalities per 100,000 automobiles registered, which declined steadily from 182 in 1917 to 100 in 1924.

TABLE 3.—AUTOMOBILE FATALITIES^a COMPARED WITH REGISTRATIONS—UNITED STATES

Year	Total number automobile deaths	Total registration of automobiles	Number automobile fatalities per 100,000 automobiles registered
1917.....	9,097	4,983,340	182
1918.....	9,457	6,146,617	154
1919.....	9,825	7,565,446	130
1920.....	11,074	9,231,941	119
1921.....	12,370	10,463,295	118
1922.....	13,676	12,238,375	112
1923.....	16,452	15,092,177	109
1924.....	17,566	17,591,981	100

^a Table taken from records of Department of Commerce, U. S. Bureau of Public Roads, and National Automobile Chamber of Commerce. Fatalities are those caused by automobiles alone, and do not include accidents in which automobiles were involved with heavier vehicles.

C. THE TREND OF TRAFFIC FATALITIES IN 1924

Considering the preceding tables and the more detailed reports of the Department of Commerce and the Interstate Commerce Commission, it is evident that:

1. There was a substantial decrease during the year 1924 in the number of all types of traffic accidents except those in which the automobile was involved.
2. Fatalities at steam railway crossings decreased by 119, or 5.2 per cent.
3. Fatalities due to the operation of street cars declined by 170, or 8.5 per cent.

4. The number of fatalities due to the operation of motorcycles decreased by 62, or 18.5 per cent.

5. In striking contrast is the increase of 1,114 fatalities, or nearly 7 per cent, due to the operation of automobiles. The lack of improvement in traffic safety on our streets and highways during 1924, therefore, is bound up entirely in motor car operation.

The population of our urban districts is increasing more rapidly than that of the rural sections of the country, and this naturally tends to a congestion of traffic in the urban districts. The number of automobiles operated in rural districts, however, is probably increasing as rapidly as it is in the city.

These factors tend constantly to increase the complications of the traffic problem. While there is indication of improvement in certain sections, the condition in the country as a whole is such as to require drastic action on the part of local authorities.

The trend during 1924 is further indicated by statistics compiled by state and city authorities and by private organizations. Turning to the records of fatalities in the principal cities of the United States in 1924, compared with 1923, the most inclusive compilation available to the Committee covers 158 cities with an aggregate population in 1924 of nearly 32,000,000, which may be considered typical, and includes all classes of traffic fatalities. Table 4 is a brief summary of this compilation.

TABLE 4.—TRAFFIC FATALITIES IN 158 AMERICAN CITIES*
(Aggregate Population, 1924: 31,948,875)

Vehicle	Number of deaths		Per cent increase (I) or decrease (D) 1924 over 1923
	1924	1923	
Automobile.....	6,206	5,958	I. 4.2
Steam R. R.....	1,219	1,514	D. 19.5
Street Ry.....	829	908	D. 8.7
Other vehicles.....	367	462	D. 20.6
All vehicles.....	8,621	8,842	D. 2.5

* Report of Committee on Public Accident Statistics, National Safety Council, 1925. Compilation by H. P. Steliwagen and E. E. Robinson of National Bureau of Casualty and Surety Underwriters.

Table 4 shows that the total number of fatalities in vehicular traffic declined by 221, or 2.5 per cent, from 1923 to 1924. Here again, the decline was due entirely to other vehicles than the automobile. The fatalities in which automobiles were involved increased 4.2 per cent; all other classes decreased.

The Department of Commerce publishes annually statistics of the number of deaths occurring in automobile accidents in registration states and the principal cities. These statistics for 1923 and 1924 are given in Table 5.

TABLE 5.—AUTOMOBILE FATALITIES IN 1923 AND 1924^a
(Deaths and death rates in the registration area, registration states, and 78 cities)

Area where death occurred	Number		Rate per 100,000 population	
	1924	1923	1924	1923
Registration area.....	15,528	14,411	15.7	14.9
California.....	1,254	1,239	32.0	32.6
Colorado.....	158	157	15.7	15.9
Connecticut.....	277	249	18.4	16.9
Delaware.....	46	55	19.8	23.9
Florida.....	242	170	22.6	16.2
Georgia.....	307	259	10.1	8.6
Idaho.....	54	51	11.2	10.8
Illinois.....	1,065	1,031	15.5	15.2
Indiana.....	480	433	15.8	14.4
Iowa.....	211	242	8.5	9.8
Kansas.....	169	217	9.4	12.1
Kentucky.....	197	166	8.0	6.7
Louisiana.....	210	158	11.3	8.5
Maine.....	91	91	11.7	11.7
Maryland.....	246	243	16.2	16.1
Massachusetts.....	685	611	16.8	15.2
Michigan.....	863	738	21.2	18.6
Minnesota.....	366	328	14.5	13.1
Mississippi.....	125	78	7.0	4.4
Missouri.....	449	398	13.0	11.6
Montana.....	69	49	11.0	8.0
Nebraska.....	113	123	8.4	9.2
New Hampshire.....	61	59	13.6	13.2
New Jersey.....	746	672	21.7	19.9
New York.....	1,985	1,930	18.1	17.8
North Carolina.....	328	258	12.0	9.6
North Dakota.....	45	1	6.6	1
Ohio.....	1,024	1,078	16.5	17.6
Oregon.....	144	120	17.3	14.6
Pennsylvania.....	1,535	1,592	16.7	17.5
Rhode Island.....	113	97	17.9	15.5
South Carolina.....	167	119	9.5	6.8
Tennessee.....	232	171	9.6	7.1
Utah.....	81	60	16.7	12.6
Vermont.....	48	46	13.6	13.1
Virginia.....	240	200	9.9	8.3
Washington.....	265	240	18.2	16.7
Wisconsin.....	363	292	13.1	10.7
Wyoming.....	59	51	27.2	24.1
Registration cities of 100,000 population or more				
Akron, Ohio.....	39	40	²	¹
Albany, N. Y.....	28	27	23.9	23.0
Atlanta, Ga.....	53	55	²	24.7
Baltimore, Md.....	129	131	16.4	16.9
Birmingham, Ala.....	55	49	27.4	25.0
Boston, Mass.....	143	133	18.4	17.3
Bridgeport, Conn.....	21	23	²	²
Buffalo, N. Y.....	112	137	21.0	25.5
Cambridge, Mass.....	27	28	22.8	25.1
Camden, N. J.....	36	44	28.5	35.4
Canton, Ohio.....	20	22	19.5	22.2
Chicago, Ill.....	560	589	19.0	20.4
Cincinnati, Ohio.....	85	102	20.8	25.1
Cleveland, Ohio.....	220	203	24.1	22.8
Columbus, Ohio.....	59	58	22.0	22.2
Dallas, Texas.....	36	34	19.2	18.7
Dayton, Ohio.....	26	27	15.4	16.3
Denver, Colo.....	40	45	14.5	16.3

^a Does not include accidents in which automobiles were involved with heavier vehicles. Table taken from report of Department of Commerce.

¹ Not added to registration area until a later date.

² Rates are omitted, pending the establishment of more satisfactory estimates of population.

Area where death occurred	Number		Rate per 100,000 population	
	1924	1923	1924	1923
Registration cities of 100,000 population or more				
Des Moines, Iowa.....	17	18	11.7	12.8
Detroit, Mich.....	305	252	25.4	21.8
Duluth, Minn.....	19	22	17.5	20.7
El Paso, Texas.....	21	18	20.9	12.5
Eric, Pa.....	22	43	2	2
Fall River, Mass.....	16	22	12.5	18.2
Flint, Mich.....	19	21	16.9	17.8
Fort Worth, Tex.....	27	9	18.2	6.3
Grand Rapids, Mich.....	31	27	20.9	18.5
Houston, Tex.....	31	25	19.4	16.1
Indianapolis, Ind.....	71	53	20.2	15.5
Jersey City, N. J.....	56	37	17.9	12.0
Kansas City, Kans.....	18	12	15.6	10.4
Kansas City, Mo.....	87	86	24.2	24.4
Los Angeles, Calif.....	267	224	2	2
Louisville, Ky.....	58	66	19.8	25.6
Lowell, Mass.....	23	18	20.8	15.6
Lynn, Mass.....	21	20	20.5	19.5
Memphis, Tenn.....	40	46	23.2	27.0
Milwaukee, Wis.....	83	62	16.8	12.8
Minneapolis, Minn.....	86	60	20.6	14.7
Nashville, Tenn.....	34	28	27.5	22.8
New Bedford, Mass.....	13	8	10.9	6.2
New Haven, Conn.....	48	28	27.3	16.2
New Orleans, La.....	84	68	20.5	16.8
New York, N. Y.....	1,000	964	17.2	16.3
Newark, N. J.....	104	107	23.3	24.4
Norfolk, Va.....	16	13	2	8.2
Oakland, Calif.....	49	50	19.8	20.8
Oklahoma City, Okla.....	18	19	2	2
Omaha, Nebr.....	29	40	13.9	19.6
Paterson, N. J.....	49	39	34.8	27.9
Philadelphia, Pa.....	263	294	13.5	15.3
Pittsburgh, Pa.....	186	146	29.7	23.5
Portland, Ore.....	41	39	14.7	14.3
Providence, R. I.....	58	52	22.0	21.5
Richmond, Va.....	33	26	18.0	14.4
Rochester, N. Y.....	48	44	15.3	13.8
St. Louis, Mo.....	197	168	24.2	20.9
St. Paul, Minn.....	55	59	22.5	24.4
Salt Lake City, Utah.....	34	20	26.4	15.8
San Antonio, Tex.....	22	30	11.5	16.2
San Diego, Calif.....	26	19	27.0	21.8
San Francisco, Calif.....	113	107	20.6	19.9
Schenectady, N. Y.....	21	19	22.6	19.2
Somerville, Mass.....	10	13	10.2	13.2
Seattle, Wash.....	53	55	2	2
Spokane, Wash.....	22	15	21.0	14.3
Springfield, Mass.....	27	23	19.2	15.9
Syracuse, N. Y.....	41	43	22.7	23.3
Tacoma, Wash.....	21	21	20.4	20.6
Toledo, Ohio.....	46	63	16.4	23.4
Trenton, N. J.....	34	36	26.2	28.3
Utica, N. Y.....	25	17	24.8	16.4
Washington, D. C.....	108	86	22.2	18.1
Waterbury, Conn.....	19	15	2	2
Wilmington, Del.....	29	29	24.2	24.6
Worcester, Mass.....	29	33	15.3	17.2
Yonkers, N. Y.....	16	17	14.4	15.8
Youngstown, Ohio.....	39	37	25.1	24.6

* Rates are omitted, pending the establishment of more satisfactory estimates of population.

As a whole, the 39 states listed in Table 5 showed increases in 1924 over 1923, both in the total number of automobile fatalities and in the death rate. Six individual states in the list, however, showed a reduction, both in number and in rate; two states showed a slight increase in

number but a reduction in rate; while the state of Maine showed both a stationary number and rate.

The results in the eight states that showed a reduction in death rate are set out in Table 6. The final two states shown are those in which the number of fatalities increased, but the death rate declined.

TABLE 6.—STATES IN WHICH THE DEATH RATE FROM AUTOMOBILE FATALITIES DECLINED, 1923 TO 1924

State	Number		Rate per 100,000 population	
	1924	1923	1924	1923
Delaware.....	46	55	19.8	23.9
Iowa.....	211	242	8.5	9.8
Kansas.....	169	217	9.4	12.1
Nebraska.....	113	123	8.4	9.2
Ohio.....	1,024	1,078	16.5	17.6
Pennsylvania.....	1,535	1,592	16.7	17.5
California.....	1,254	1,239	32.0	32.6
Colorado.....	158	157	15.7	15.9

While this is not a large list of states, the fact that as many as eight of the 39 states in the group were able to reduce their fatality rate between 1923 and 1924 indicates possibilities for the future.

Like the states, the 78 cities as a whole showed increases in number of fatalities and in death rate for 1924. The total number of fatalities increased from 5,778 to 6,067, or 5.0 per cent. Some signs may be found of reductions actually experienced in individual cities in 1924, however, which may be taken as an earnest of further reductions in 1925 and later years. Especially is this true when combined with the statistics in a later section of this report,* dealing with a comparison of the years 1924 and 1925.

As between 1923 and 1924, 33 of the 78 cities reported fewer automobile fatalities in 1924, while two cities (Wilmington, Del., and Tacoma, Wash.) reported the same number. The aggregate number of fatalities for the 33 cities reporting decreases was 2,340 in 1923 and 2,108 in 1924, a reduction of 232, or nearly 10 per cent.

The cities showing a reduction between 1923 and 1924, arranged in the descending order of the percentage reduction, and segregated by percentage groups, were as follows:

*See Tables 9 and 10, pp. 20-21

TABLE 7.—CITIES IN WHICH AUTOMOBILE FATALITIES DECLINED, 1923 TO 1924

City	Number of fatalities, 1924	Per cent reduction
<i>More than 20 per cent:</i>		
Erie.....	22	48.8
Omaha.....	29	27.5
Fall River.....	16	27.3
Toledo.....	46	27.0
San Antonio.....	22	26.7
Somerville.....	10	23.1
<i>10 to 20 per cent:</i>		
Buffalo.....	112	18.3
Camden.....	36	18.2
Cincinnati.....	85	16.7
Duluth.....	19	13.6
Memphis.....	40	13.0
Louisville.....	58	12.1
Worcester.....	29	12.1
Denver.....	40	11.1
Philadelphia.....	263	10.5
<i>5 to 10 per cent:</i>		
Ft. Worth.....	19	9.5
Canton.....	20	9.1
Bridgeport.....	21	8.7
St. Paul.....	55	6.8
Trenton.....	16	5.9
Des Moines.....	34	5.6
Oklaoma City.....	17	5.6
Oklaoma City.....	18	5.3
<i>Less than 5 per cent:</i>		
Chicago.....	560	4.9
Syracuse.....	41	4.7
Dayton.....	26	3.7
Seattle.....	53	3.6
Atlanta.....	53	3.6
Cambridge.....	27	3.6
Newark, N. J.....	104	2.8
Akron.....	39	2.5
Oakland.....	49	2.0
Baltimore.....	129	1.5

The cities of Scranton, Reading and Hartford showed substantial reductions in the period 1923 to 1924, but were not included in the reports of the Department of Commerce for 1925. Scranton reduced its automobile fatalities by 41.5 per cent in 1924, compared with 1923; Hartford showed a reduction of 17.5 per cent, and Reading 11.1 per cent.

D. THE TREND OF TRAFFIC FATALITIES IN 1925

The Department of Commerce, the Interstate Commerce Commission, the National Safety Council, the National Automobile Chamber of Commerce, and government officials in several states and a number of principal cities, are now collecting statistics of traffic accidents. Some of these organizations and individuals publish their data weekly and monthly. Their reports have been studied by the Committee to obtain an impression concerning the trend during 1925. Unfortunately, the statistics by weeks and months for many of the jurisdictions are available only for 1925 or a part of that year, no comparison being therefore practicable with 1924 or earlier years. Improvements are constantly being made in the collection and compilation of traffic accident statistics, and it is evident that a more satisfactory comparison will be available in the near future to show the trend from month to month in the principal cities and in a considerable number of states.

Grade Crossing Accidents.—The Interstate Commerce Commission has been compiling and publishing statistics of the number of fatalities at steam railway grade crossings for a number of years. The report of the Commission shows that during the first ten months of 1925 there were 4,207 accidents at grade crossings, compared with 4,069 during the first ten months of 1924. In these accidents, fatalities numbered 1,780 in 1925, and 1,722 in 1924. The number of non-fatal casualties, commonly called "persons injured," declined from 5,130 in 1924 to 4,938 in 1925. There was thus an increase of 3.4 per cent in grade crossing accidents and in fatalities during this period of 1925, and a decline of 3.7 per cent in injuries. These changes occurred during a period when the number of automobiles on the highways was increasing rapidly.

State Traffic Accident Statistics.—State highway commissioners and other state officials charged with the responsibility of administering the laws and regulations controlling traffic have furnished the Committee with replies to a series of questions concerning methods of reporting accidents. These replies show clearly that the practice of collecting these statistics is increasing and that there is a growing tendency to establish in the states a central office to which all reports concerning automobile accidents are made and which is charged with the responsibility of compiling and publishing these statistics. While this is the general practice, several states report that no progress has been made in this respect. Others report that while the system has been inaugurated it has not been in practice long enough to furnish any statistics that would be instructive in determining the trend of accidents during 1925. Some progress has been made in this field, and more satisfactory reports will be available next year.

The following states were able to furnish the Committee with statistics concerning the number of traffic fatalities during 1925 for the periods indicated:

TABLE 8

State	Number of months covered	Number of fatalities
Connecticut.....	11	320
Delaware.....	9	52
Massachusetts.....	9	584
New York.....	11	1,706
Oklahoma.....	9	16
Oregon.....	10	39
Rhode Island.....	9	94
South Carolina.....	9	85
Vermont.....	10	50
Washington.....	9	219

While it is probable that other states are compiling these data, Vermont was the only state that furnished the Committee with compara-

tive figures for 1924 and 1925. In that state there were 50 fatalities during the first ten months of 1925, compared with 48 for the same period in 1924.

Automobile Accident Statistics of Principal Cities.—Statistical records of traffic fatalities are maintained in most of the principal cities of the United States. Fatalities occurring as the result of automobile accidents are reported weekly to the Department of Commerce, and at the beginning of the year 1925 a number of the cities also agreed voluntarily to report them monthly to the National Safety Council on a standard form.

On the basis of its returns, the Department of Commerce published during 1925 a four-week summary of automobile fatalities, giving figures for the principal cities for each successive period of four weeks. Statistics were included for the total number of weeks of 1925 to date, for the corresponding period of 1924 (cumulated by months), and for the whole of the years 1924 and 1923, together with the accident rate per 100,000 population.*

The latest report of the Department of Commerce, at the time this is written, covers the period of 12 months and 6 days, or 53 weeks, from December 28, 1924, to January 2, 1926, inclusive. The report includes 78 cities,^b for which comparisons are available for the years 1923 and 1924, and for the year 1925 as defined above (53 weeks ended Jan. 2, 1926). A summary for these 78 cities, with an aggregate population of nearly 32,000,000, appears in Table 9.

TABLE 9.—AUTOMOBILE FATALITIES IN 78 CITIES

Number of cities.....	78
Population (July 1, 1925, estimated).....	31,600,000
Total automobile fatalities reported:	
Year 1923 as a whole.....	5,778
Year 1924 as a whole.....	6,067
Year 1925 (From Dec. 28, 1924 to Jan. 2, 1926).....	6,321
Rate of increase 1923-24.....	5.0 per cent
Rate of increase 1924-25 ^c	2.4 per cent

These 78 cities showed an increase in automobile fatalities from 5,778 in 1923 to 6,067 in 1924, or 5.0 per cent.

The comparison between 1924 and 1925 covers slightly different periods—12 months for 1924 and 12 months and 6 days for 1925—yet an approximation may be made to place the two totals on a comparable basis. Such an approximation for the period in 1925 corresponding to the year 1924 brings the estimated total to 6,215. This total may be compared with the 6,067 for the year 1924. The increase in 1925,

* These reports charge a fatality to the city where the death occurred, although some of the accidents occurred outside the city limits.

^b The 78 cities are those listed in Table 5.

^c Adjusted to eliminate additional six days included in 1925.

compared on this basis with 1924, was 148 lives lost, or 2.4 per cent.

Thus these 78 cities showed a progressive increase in automobile fatalities of 5.0 per cent between 1923 and 1924, and of 2.4 per cent between 1924 and the corresponding period of 1925. While both years showed an increase, the rate of increase appears to be lessening.

It is possible to make a reasonably satisfactory comparison for 1924 and 1925, for the individual cities. Making no allowance for the difference of 6 days in the periods covered, it appears that there was an improvement in the traffic fatality situation in 27 cities, which reported a smaller number of fatalities during the period in 1925 than in 1924. The same number of fatalities were reported for 3 cities, while 48 reported a greater number of fatalities for 1925 than for 1924. The following statement summarizes the statistics for the 78 cities, arranged in these three groups:

27 of the 78 cities showed improvement, with a smaller number of fatalities in 1925 than in 1924. The aggregate number declined from 2,120 to 1,900, or 10.4 per cent.

3 of the 78 cities reported the same number, while

48 of the 78 cities reported a greater number in 1925. The aggregate for this group increased from 3,829 to 4,303, or 12.4 per cent.

The 27 cities in which automobile fatalities declined in 1925 are scattered quite generally throughout the states. In some of the cities

TABLE 10.—CITIES IN WHICH AUTOMOBILE FATALITIES DECLINED
1924 TO 1925*

City	Number of fatalities, Dec. 28, 1924—Jan. 2, 1926	Per cent reduction
<i>More than 20 per cent:</i>		
Wilmington (Del.)	17	41.4
Springfield (Mass.)	17	37.0
Syracuse	29	29.3
Lynn	15	28.6
Houston	24	22.6
San Francisco	89	21.2
<i>10 to 20 per cent:</i>		
Washington (D. C.)	88	18.5
Spokane	18	18.2
Paterson	41	16.3
Utica	21	16.0
Cambridge	23	14.8
Fort Worth	23	14.8
St. Paul	47	14.5
Tacoma	18	14.3
Los Angeles	232	13.1
Minneapolis	75	12.8
Norfolk	14	12.5
New Haven	42	12.5
Oakland	42	12.2
<i>5 to 10 per cent:</i>		
Birmingham	51	7.3
Pittsburgh	176	5.4
Denver	38	5.0
<i>Less than 5 per cent:</i>		
New Orleans	81	3.6
Newark, N. J.	101	2.9
Detroit	297	2.6
Kansas City (Mo.)	86	1.1
St. Louis	195	1.0

*Based upon the reports of the Department of Commerce.

there were noteworthy reductions, while in others the decrease was slight. The cities showing a decline, that is, an improvement in 1925, are listed in Table 10 arranged in the descending order of percentage of reduction, and segregated by percentage groups.

The three cities that showed no change between 1924 and 1925 (in itself an improvement, because of the slightly longer period covered in 1925) were Grand Rapids, Indianapolis, and Yonkers.

On the other hand—and this side of the picture must not be overlooked—there were 48 cities in which the number of fatalities were greater during 1925 than during 1924. The percentage increase in these cities ranged from a minimum of one-tenth of one per cent to a maximum of 65 per cent.

We have now presented two sets of statistical comparisons as to automobile fatalities in the principal cities of the United States, one including those cities which showed reductions between 1923 and 1924, while the other included cities showing reductions between 1924 and 1925. It is now possible to combine the respective reductions, and to show what cities have reported improvement in both of the years 1924 and 1925. These cities may be said to show a definite trend toward greater safety on their streets.

Six cities appeared in both comparisons, showing reductions in both periods, from 1923 to 1924 and from 1924 to 1925, and are listed in Table 11. The city of Wilmington, Del., was stationary in 1924, but led all other cities in the reduction reported for 1925. The cities are arranged in alphabetical order.

TABLE 11.—CITIES IN WHICH AUTOMOBILE FATALITIES DECLINED IN BOTH 1924 AND 1925

City	Per cent of decrease 1923-1924	Per cent of decrease 1924-1925
Cambridge, Mass.....	3.6	14.8
Denver, Colo.....	11.1	5.0
Newark, N. J.....	2.8	2.9
Oakland, Calif.....	2.0	12.2
St. Paul, Minn.....	6.8	14.5
Syracuse, N. Y.....	4.7	29.3

Two cities in this list of 6—Denver and St. Paul—showed reductions of 5 per cent or more in both periods.

The Committee on Statistics submits this list of cities which have displayed a definite downward trend in automobile fatalities during the past two years—and particularly the two named as showing marked reductions in both years—as an example of what has been done and what can be done in the way of increased safety on our city streets. We hope these cities may draw from their own record encouragement

to even better performance, and that other cities will be stimulated to redouble their efforts to the same end.

The National Safety Council inaugurated in 1925 a monthly summary of automobile fatalities, based on returns from 80 to 90 cities, showing the number of motor vehicle fatalities and injuries for the current month, and for the cumulative period to date.

On the basis of the returns from varying groups of cities for each of the 11 months to November, 1925, the National Safety Council has estimated the average daily number of persons killed in automobile accidents in the United States during that period. On the basis of this estimate, the following table has been prepared:

TABLE 12.—ESTIMATE OF MOTOR VEHICLE FATALITIES IN THE UNITED STATES
(January to November, 1925)*

Month	Total number	Daily number
January.....	899	29
February.....	1,400	50
March.....	1,736	56
April.....	1,680	56
May.....	1,798	58
June.....	1,710	57
July.....	1,798	58
August.....	1,922	62
September.....	1,950	65
October.....	2,294	74
November.....	2,400	80
Eleven months, 1925.....	19,587	58.6

* Based upon monthly statistical reports of National Safety Council, 1925.

On the assumption that the daily rate of fatalities in December was somewhat under that of November, the National Safety Council has announced an estimated grand total of approximately 21,000 for the year 1925 as a whole. In 1924, it will be remembered, the estimated total for fatalities in connection with which motor cars were involved was about 20,000.* The increase for 1925, on this basis of estimate, would be about 5 per cent.

Other sources of information indicate a larger rate of increase for the United States as a whole in 1925 than that shown for the 78 principal cities by the Department of Commerce. The National Automobile Chamber of Commerce started collecting monthly figures on motor fatalities in January, 1924. It has had the cooperation of more than 300 newspapers in collecting data on the causes of accidents. Totals of motor fatalities in the larger cities have been supplied to that organization each month by city health departments. The monthly figures and the cumulative totals for 1924 and 1925 are published each month, and indicate an increase of about 5 per cent in 1925.

An estimate for 1925 recently published by the Association of Life Insurance Presidents found the increase in automobile fatalities over

1924 at about 6 per cent. This was based on reports to 52 companies for the first 10 months of 1925.

E. CONCLUSIONS AND OPINIONS

General Conclusions.—The foregoing statistics make it clear that the problem of street and highway traffic safety in the United States still remains serious, as was pointed out in the report of the Committee for 1924. This is particularly true with respect to the operation of motor vehicles.

Statistics of automobile fatalities in 1924, such as have been summarized by the Department of Commerce for 39 states and for the principal cities of the United States, indicate that in 43 cities with a population of 100,000 or more, and in 31^a of the 39 states, the total number in 1924 was greater than in 1923.

The total number of motor vehicle fatalities (combining automobiles and motorcycles) increased 6.3 per cent in the United States as a whole between 1923 and 1924.

The statistics for 1925 carry some rays of hope of improvement, although a number of jurisdictions have only for the first time this year set up a current record of automobile accidents, with the result that it is impracticable to secure any nation-wide comparison with the corresponding period of previous years.

Automobile fatalities in 78 of the principal cities of the United States for the year 1925, indicate an increase over the corresponding period of 1924, amounting to 2.4 per cent. In other words, the aggregate for 1925 was somewhat greater than in 1924, although the rate of increase was smaller than between 1923 and 1924.

Special tabulations made by the National Safety Council provide no comparison between 1925 and the corresponding period of 1924, and it is therefore impossible to draw any exact conclusion as to the probable trend during 1925, although a rough approximation indicates a greater increase for 1925 than that shown in Department of Commerce reports.

Figures compiled monthly by the National Automobile Chamber of Commerce do contain comparative figures for 1924, which also show a somewhat greater rate of increase for 1925 than the summaries of the Department of Commerce. The same is true of an estimate by the Association of Life Insurance Presidents. Statistics from other sources usually fail to indicate the trend in 1925, compared with corresponding periods of the previous year or years.

It thus appears that the rate of increase in automobile fatalities has been somewhat checked, although it is not yet possible to record an actual decrease.

^aNot including North Dakota, for which comparable figures for both years are not available.

Taking a longer view of the situation, the question may well be asked whether traffic accidents are permanently on the increase, or whether the rate of increase shows a sufficient slackening to warrant the hope that a downward trend may soon be experienced.

Some light on this question is shed by a comparison of the trend over a period of years. For example, computations based on Table 1 indicate an increase of 17.8 per cent in the total number of traffic fatalities between 1922 and 1923, and an increase of 3 per cent between 1923 and 1924. This decline in the rate of increase offers some hope for a more nearly stationary record in 1925, and an actual downward turn in the future.

As the motor vehicle looms up more and more significantly in the problem, the trend of fatalities in automobile accidents becomes also of increasing significance. Turning to Table 2, we find that the number of fatalities charged against automobile operation by the Department of Commerce has increased steadily since 1917, the earliest year shown in the table. The rate of increase in each successive year, over the next preceding year, computed on the basis of the figures in Table 2, was as follows:

1918 over 1917.....	4.0 per cent
1919 over 1918.....	3.9 per cent
1920 over 1919.....	12.7 per cent
1921 over 1920.....	11.7 per cent
1922 over 1921.....	10.6 per cent
1923 over 1922.....	20.3 per cent
1924 over 1923.....	6.8 per cent

It will be seen that the rate of increase in automobile fatalities showed a generally rising trend to 1923; that it seems to have reached its peak in that year; and that it showed a considerable drop in 1924. We have also seen, from our discussion of Tables 9 and 12, that the rate of increase between 1924 and 1925 in the United States as a whole seems likely to be less than in the previous years, possibly not more than 3 per cent and probably less than 6 per cent.

While it is early to draw definite conclusions from this trend, we point to the declining rate of increase in fatal accidents as an indication that the cumulative efforts of individuals and of organizations toward greater safety of traffic on our streets and highways are beginning to bear fruit.

Opinions.—Because of the partial lack of available statistics along this line, the Committee requested opinions from well informed men in different lines of activity, holding positions of responsibility with regard either to the regulation of accidents or to the collection of statistics.

Letters have been received from a considerable number of these persons, and a summary of their replies to the inquiry of the Committee is presented below.

In brief, the Committee asked them to express their best judgment as to whether safety on our streets and highways is growing greater or less. Realizing that a categorical question of this nature cannot be expected to receive a categorical reply, yet the Committee felt that in light of the lack of satisfactory comparative statistics, the next best type of information would be derived from a consensus of opinion of the men in best position to know the facts and trends.

In general, replies to the Committee express the opinion that there is greater effort on the part of the individual motor car driver to obey traffic regulations and to consider the safety of other drivers and of pedestrians. They also express the opinion, with a few outstanding exceptions, that traffic regulations are more efficiently enforced.

It is also the consensus of opinion that publicity and educational campaigns of various kinds have resulted in improvement both in the regulation of traffic and in the more intelligent operation of machines.

A few excerpts from letters are given below:

Thomas P. Henry, President of the American Automobile Association, after pointing out that statistical information is of such a nature as to make any statement, whether based on statistics or not, merely a conjecture, expresses the opinion that the average motorist is showing a larger degree of intelligence than ever before in operating his car. He attributes this partly to a longer experience in handling his vehicle, and partly to the precautionary steps being taken by many states to see that no person, either mentally or physically incapable of driving an automobile, is permitted to menace the lives or property of others. He adds that the greatest need is for detailed statistics and data on both accidents and fatalities. Only so can an intelligent diagnosis be made and the defects remedied.

R. C. Limerick, State Highway Engineer of Arkansas, believes that motor vehicle drivers are becoming more careful, and that the ratio of accidents to motor vehicles in use in Arkansas is on the decrease. He attributes this trend to constant publicity, better driving on the part of drivers of motor vehicles, improved road conditions, and improved enforcement of motor vehicle regulations.

R. B. Stoeckel, Commissioner of Motor Vehicles of Connecticut, states that the number of accidents slightly decreased between 1924 and 1925 in that state, notwithstanding the fact that the number of vehicles registered increased 20 per cent. He believes that the system providing for the effective disciplining of persons responsible for accidents, combined with educational campaigns, have been important

factors in reducing the number of accidents. In general, he believes that the operators of cars are making better records than ever before.

C. C. Reynolds, Superintendent of the State Highway Department of Delaware, notes a widespread desire among the better class of drivers to rid the road of irresponsible and reckless operators.

W. M. Colladay, Superintendent of the Motor Vehicle Department of Iowa, believes that the general public is becoming more considerate of drastic traffic regulations.

C. G. Hubbell, Statistician of the Department of Public Works of Massachusetts, records a notable reduction in the number of children killed in automobile accidents, due to publicity and safety campaigns, and to safety instruction in the schools. He states that during the nine months from December 1, 1924, to August 31, 1925, 43 more fatalities occurred among adults, but 14 fewer fatalities among children, in motor vehicle accidents in that state.

C. A. Harnett, Commissioner of Motor Vehicles of the State of New York, expresses the hope that a substantial reduction of the death rate by automobiles will be experienced in that state in 1925, as compared with 1924. He believes that this decrease, if it occurs, will be due to safety and publicity campaigns. Nothing is so successfully deterrent to careless driving, he adds, as the suspension or revocation of a motorist's license. The persistent application of this form of punishment, in his judgment, will do more than all safety campaigns combined.

C. S. Avery, Chairman of the State Highway Commission of Oklahoma, states that more accidents are occurring on rural roads in proportion to the amount of traffic than in the most congested traffic centers. This would indicate that the major problem today is properly to educate the motorist and mark the improved highways.

C. T. Pierce, Deputy Commissioner of Motor Vehicles of Vermont, notes a considerable improvement in obedience to traffic regulations, due largely to the assignment of a number of motorcycle officers as traffic policemen on the traffic highways.

H. G. Shirley, Chairman of the State Highway Commission of Virginia, believes that the number of automobile accidents in the State of Virginia will be less in 1925 than in 1924.

Similar inquiries were submitted to the police departments or safety councils or other similar organizations in the principal cities throughout the United States. Replies were generally received, the great majority of which expressed the opinion that motorists are becoming more observant of traffic laws and regulations, and are driving with greater intelligence and care. The consensus of opinion also strongly approved of safety and educational campaigns, whether in the schools or among the general public, and testified to the beneficial results of such campaigns.